REMARKS

As a result of the foregoing amendments, the legend to the table presented on pages 27 and 28 of the specification has been amended to include the date of deposit for all deposited strains and the street address of the Budapest Treaty depository used. The fact of the deposits, the individual deposit numbers, and the name and city of the Budapest Treaty depository were in the originally filed application. See pages 4, 7, 14, 16, 19 and 26-28. Furthermore, process claim 3 has been amended to make it an independent claim and to include the additional steps of mutagenesis and screening, which are supported throughout the specification, including pages 4 and 25. New claim 26 has been added to claim the product of process claim 3. New claim 27 has been added to further limit the process of claim 3 by requiring that the mutagenesis occur while the strain includes a GLUT1 gene. See page 23 of the specification for support of the mutagenesis with GLUT1 procedure and page 25 to support use of these mutated cells for selection with GLUT4. New claim 28 has been added to claims the product of the process of claim 27. No new matter has been entered by these amendments. Entry of these amendments and reconsideration of pending and elected claims 1-10 and 26-28 are respectfully requested.

Claims 1, 4-6 and 8-10 Comply With the Written Description Requirement

Reconsideration and withdrawal of the rejection of claims 1, 4-6 and 8-10 for lack of written description under 35 U.S.C. 112, first paragraph, are respectfully requested. In essence, the rejection argues 1) that "the rejected claims encompass an enormous genus of yeast strains" (page 4, lines 9-10 of the Office Action) and 2) that from the description and examples given that "one of skill in the art would not have been able to envision a representative number of specific mutations of combination of mutations sufficient to describe the broad genus of yeast strains encompassed by the rejected claims" (sentence bridging pages 5 and 6). The first prong of the rejection is an unsupported and unwarranted assumption and the second prong is not part of the written description requirement, as it applies to the rejected claims.

The rejection's assumption that claims 1, 4-6 and 8-10 "encompass an enormous genus of yeast strains" that are insufficiently described in the specification is not supported. The broadest rejected claim, claim 1, has three requirements: 1) the organism must be a strain of the yeast *Saccharomyces cerevisiae*, 2) the strain must no longer grow on substrates with hexoses as the only carbon source and 3) the ability to grow on a hexose as the only carbon source must be restored by the expression of a GLUT4 gene in the strain. The rejection seems to mistake each of these limitations as broadening the scope of the claims, not narrowing it.

Although there are certainly an enormous number of genetic mutations that could occur or be caused in a yeast that would allow it to still fall within the taxonomy class of a strain of *Saccharomyces cerevisiae*, one of skill in the art is unlikely to be confused whether a yeast is a member of that taxonomy class. The features of a *Saccharomyces cerevisiae* yeast are well known in the field of taxonomy and are easily applied by one of skill in the art of yeast genetics. The fact that taxonomy classes are defined functionally (organism shape, size, habitat, method of metabolism, etc.) does not place upon the instant inventors the onus of adequately describing all of the broad class of specific genomic variations that can still be contained in the class of *Saccharomyces cerevisiae* strains. The class of yeast known as *Saccharomyces cerevisiae* is well-known in the art and the instant inventors are not required in their specification teach what is well-known in the art.

However, the instant claims are not to the entire genome-scape of *Saccharomyces cerevisiae.* The claimed subject-matter is further limited to strains of *Saccharomyces cerevisiae* which cannot grow on hexoses alone as a carbon source. Such strains are known in the art. See page 3, lines 22-31 of the specification. Accordingly, Applicants have no duty under 35 U.S.C. 112, first paragraph, to provide an exhaustive teaching of different combinations of mutations capable of producing a *Saccharomyces cerevisiae* strain which cannot grow on hexoses as the only carbon source.

The instant claims are further limited to strains whose ability to grow on a hexose carbon source is restored by expression of a GLUT4 gene. This, as the limitation which distinguishes the instant claim scope from the prior art, sets the boundries between the genus claimed and the prior art. Accordingly, the duty of Applicants under the written description requirement of 35 U.S.C. 112, first paragraph, is to adequately describe those strains of *Saccharomyces cerevisiae* whose ability to grow on a hexose as the only carbon substrate is recovered by the expression of a GLUT4 gene in the strain. Applicants disclose that they have isolated and described nine such strains. See page 25, lines 16-17, of the specification. The rejection fails to disclose any scientific reason for the assumption that a such a large number of strains could enable recovery of growth on hexose by expression of GLUT4 that the nine strains isolated cannot represent the genus. In fact, the only scientific evidence available on this record goes against the rejection's assumption. If mutations enabling recovery strains are so varied and common as suggested by the rejection, why was the scientific community unable to produce yeast whose only functional hexose transporter was Glut4 until it was achieved by applicants? See paragraph bridging pages 2 and 3 of the specification, explaining the problem, and Kasahara, et al, Biochemica et Biophysica Acta, 1997, cited by the Examiner as the state of the art on page 9 of the Office Action.

Lastly, Applicants note that the rejection seems to imply that only a genome-level description (i.e. a list of specific genomic DNA sequence changes) of the claimed genus of strains would meet the description requirement. Applicants respectfully traverse any such implication. The instant

claims define the claimed *Saccharomyces cerevisiae* strain genus in both structural and functional terms, fully meeting the requirements of 35 U.S.C. 112 and clearly demonstrating to one of skill in the art that Applicants were in possession of the genus claimed at the time of filing.

Rejection of Claims 2 and 7 Overcome by Amendment to Specification

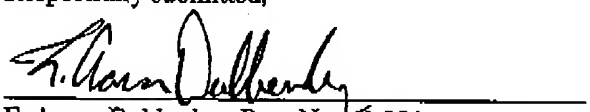
The amendment to the specification perfects the statements of the specification that the various strains claimed have been properly deposited. The originally filed application stated that they were deposited at the Deutche Sammlung von Mikroorganismen und Zellkulturen GmbH, a Budapest Treaty depository in Braunschweig, Germany, and refers to each strain by its deposit number. See pages 4, 7, 14, 16, 19 and 26-28 of the specification. The amendment to the specification served only to provide the street address of the depository and the date of deposit. Accordingly it is believed that no separate declaration of deposit is required. The undersigned hereby verifies that any and all restrictions on the availability of the deposited strains will be irrevocably removed upon granting of a patent from the instant application.

Rejection of Claim 3 Overcome by Amendment to Claim 3

The rejections of claim 3 under both the first and second paragraph of 35 U.S.C. 112 have been made moot by the amendment to claim 3. This amendment includes the mutagenesis step suggested by the Examiner on page 11 of the Office Action to overcome these rejections.

Applicants respectfully submit that the application is now in condition for allowance and request prompt notice thereof.

Respectfully submitted,



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